

ABSTRACT

WATER-SWELLABLE POLYMERS

A water-swellaable linear polyurethane polymer is formed by reacting a polyethylene oxide (e.g. PEG 4000 to 35,000), a difunctional compound (e.g. a diamine or diol such as 1,10-decanediol) with a diisocyanate. The ratio of the three components is generally in the range 0.1-1.5 to 1 to 1.1 – 2.5. The polyurethane is water-swellaable in the range 300 to 1700% and soluble in certain organic solvents such as dichloromethane. It can be loaded with pharmaceutically active agents, particularly of high molecular weight, to produce controlled release compositions, such as pessaries etc.